AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-58. (cancelled)

59. (currently amended) A process for producing polyhydroxy carboxylate particles having surface-bound proteins, the process comprising:

A) providing a cell comprising ~~:~~

at least one gene that codes for a fusion protein, the fusion protein comprising (a) a polymer synthase from a microorganism of the genera *Ralstonia*, *Alcaligenes*, *Pseudomonas*, *Aeromonas*, or *Thiocapsa*, and (b)

~~(a) at least one binding domain capable of binding one or more biologically active substances or one or more coupling reagents or a combination thereof, or~~

~~(b)~~ at least one ~~biologically active~~ protein selected from an oligopeptide, antibody, abzyme, non-catalytic protein or enzyme, ~~, or~~

~~(c) a combination thereof,~~

fused with the N-terminus of the polymer synthase, the polymer synthase comprising a polymer particle binding domain;

B) cultivating the cell in a culture medium so that the cell produces the fusion protein from the at least one gene and produces polymer particles comprising polyhydroxy carboxylate, wherein the polymer particle binding domain of the fusion protein is bound to a polymer particle; and

C) separating the polymer particles from the cultivated cells to produce a composition comprising polyhydroxy carboxylate particles having surface-bound proteins.

60. (previously presented) A process according to claim 100, wherein the at least one gene that codes for a protein involved in the formation of polymer particles is selected from the group consisting of a gene coding for a phaA thiolase, a gene coding for a phaB ketoacyl reductase, a gene coding for a polymer depolymerase, a gene coding for a polymer regulator, a gene coding for a polymer synthase, and a gene coding for a particle size-determining protein, or a combination thereof.

61-63. (cancelled)

64. (previously presented) A process according to claim 59, wherein the polymer synthase is from *Ralstonia eutropha*, *Pseudomonas oleovorans*, *Pseudomonas putida*, *Pseudomonas aeruginosa*, *Aeromonas punctata* or *Thiocapsa pfennigii*.

65-71. (cancelled)

72. (currently amended) A process according to claim 59, wherein the culture medium comprises at least one hydroxy fatty acid ~~with a functional side group selected from methyl groups, alkyl groups, hydroxyl groups, phenyl groups, sulfhydryl groups, primary, secondary and tertiary amino groups, aldehyde groups, keto groups, ether groups, carboxyl groups, O-ester groups, thioester groups, carboxylic acid amide groups, hemiacetal groups, acetal groups, phosphate monoester groups and phosphate diester groups, or a mixture of any two or more thereof~~.

73. (currently amended) A process according to claim 59, wherein a ~~substrate~~ hydroxy fatty acid is added to the culture medium in such a quantity that it is sufficient to ensure control of the size of the polymer particles.

74. (currently amended) A process according to claim 59, wherein the cell is a microorganism selected from ~~a)~~ the genera consisting of *Escherichia*, *Ralstonia*, *Alcaligenes*, *Pseudomonas* ~~*and*~~, *Halobiforma* *Aeromonas*, and *Thiocapsa*~~; or~~

~~88.b) the group consisting of *Ralstonia eutropha*, *Alcaligenes latus*, *Escherichia coli*, *Pseudomonas fragi*, *Pseudomonas putida*, *Pseudomonas oleovorans*, *Pseudomonas aeruginosa*, *Pseudomonas fluorescens* and *Halobiforma haloterrestris*~~.

75. (cancelled)

76. (previously presented) A process according to claim 59, wherein the polymer particles have a diameter of 10 nm to 3 µm.

77. (previously presented) A process according to claim 59, wherein the polymer particles have a diameter of 10 nm to 900 nm.

78. (previously presented) A process according to claim 59, wherein the polymer particles have a diameter of 10 nm to 100 nm.

79. (currently amended) A process according to claim 59, wherein ~~at least one biologically active substance or~~ at least one dye ~~or a mixture thereof~~ is added to the culture medium and incorporated into the particles.

80-84. (cancelled)

85. (currently amended) A process according to claim 59, further comprising

D) chemically modifying the polymer synthase ~~or the protein involved in the formation of polymer particles to form at least one binding domain~~ by contacting the polymer synthase ~~or the protein~~ with a coupling reagent.

86-87. (cancelled)

88. (currently amended) A process according to claim 59, <u>further comprising</u>

<u>D) binding a biologically active substance to the fusion protein,</u> wherein the biologically active substance is selected from

A<u>i</u>) dideoxyinosine, floxuridine, 6-mercaptopurine, doxorubicin, daunorubicin, 1-darubicin, cisplatin, methotrexate, taxol, antibiotics, anticoagulants, germicides, antiarrhythmic agents and active ingredient precursors or derivatives thereof, or

iiB) insulin, calcitonin, ACTH, glucagons, somatostatin, somatotropin, somatomedin, parathyroid hormone, erythropoietin, hypothalamic release factors, prolactin, thyroid-stimulating hormone, endophins, enkephalins, vasopressins, non-naturally occurring opiates, superoxide dismutase, antibodies, interferons, asparaginase, arginase, arginine deaminase, adenosine deaminase, ribonuclease, trypsin, chymotrypsin or pepsin, or

iii) an oligopeptide, antibody, abzyme, non-catalytic protein or enzyme.

89. (previously presented) A process according to claim 59, wherein the biologically active protein is selected from insulin, calcitonin, ACTH, glucagons, somatostatin, somatotropin, somatomedin, parathyroid hormone, erythropoietin, hypothalamic release factors, prolactin, thyroid-stimulating hormone, endophins, enkephalins, vasopressins, non-naturally occurring opiates, superoxide dismutase, antibodies, interferons, asparaginase, arginase, arginine deaminase, adenosine deaminase, ribonuclease, trypsin, chymotrypsin or pepsin.

90. (currently amended) A process according to claim 59, wherein ~~the biologically active substance or~~ the biologically active protein is an antibody or antibody fragment.

91. (previously presented) A process according to claim 85, wherein the coupling reagent is selected from the group consisting of bis(2-oxo-3-oxazolydinyl)phosphonic chloride (BOP-Cl), bromotrispyrrolidinophosphonium hexafluorophosphate (PyBroP), benzotriazol-1-yl-oxy-trispyrrolidinophosphonium hexafluorophosphate (PyBOP), n-hydroxysuccinimide biotin, 2-(1H-benzotriazol-1-yl)-1,1,3,3-tetramethyluronium

hexafluorophosphate (HBTU), dicyclohexylcarbodiimide, disuccinimidyl carbonate, 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide (EDC), bis(2-oxo-3-oxazolydinyl)phosphine, diisopropylcarbodiimide (DIPC), 2-(1H-benzotrioxazolyl)-1,1,3,3-tetramethyluronium tetrafluoroborate (TBTU), 2-(5-norbornene-2,3-dicarboxyimido)-1,1,3,3-tetramethyluronium tetrafluoroborate (TNTU), para-nitrophenylchloroformate, and O-(n-succinimidyl)-1,1,3,3-tetramethyluronium tetrafluoroborate (TSTU).

92. (previously presented) A process according to claim 59, wherein the cell comprises two or more of the at least one gene that codes for a fusion protein.

93. (previously presented) A process according to claim 59, wherein the cell comprises three or more of the at least one gene that codes for a fusion protein.

94. (previously presented) A process according to claim 59, wherein one or more of the surface-bound proteins are removed from the polymer particles.

95. (previously presented) A process according to claim 59, wherein the composition consists essentially of polymer particles having surface-bound proteins.

96. (cancelled)

97. (currently amended) A method of binding a second biologically active ~~substance~~ protein comprising

A) providing a composition of polymer particles produced by a method according to claim 59, wherein optionally a coupling reagent is bound to the ~~binding domain when a binding domain is present~~fusion protein, and

~~100.B~~)contacting the composition with a sample comprising a second biologically active ~~substance~~ protein selected from an oligopeptide, antibody, abzyme, non-catalytic protein or enzyme so that ~~the binding domain or~~ the biologically active protein or the coupling reagent binds the second biologically active ~~substance~~protein.

98-99. (cancelled)

100. (currently amended) A process according to claim 59, wherein the cell further comprises ~~at least~~ one or more genes that codes for ~~an~~ one or more additional fusion proteins, the one or more additional fusion proteins comprising

(a) a polymer particle binding domain, or

(b) a protein involved in the formation of the polymer particles, the protein comprising a polymer particle binding domain,

the additional fusion protein further comprising

(i) at least one biologically active protein selected from an oligopeptide, antibody, abzyme, non-catalytic protein or enzyme, or

(ii) at least one binding domain capable of binding one or more biologically active ~~substances~~ proteins or one or more coupling reagents, wherein the biologically active protein is selected from an oligopeptide, antibody, abzyme, non-catalytic protein or enzyme, or

(iii) at least one biologically active protein and at least one binding domain capable of binding one or more biologically active substances or one or more coupling reagents, wherein the biologically active protein is selected from an oligopeptide, antibody, abzyme, non-catalytic protein or enzyme, or

(iv) a combination thereof.

101 (new) A process according to claim 74, wherein the microorganism is selected from the group consisting of *Ralstonia eutropha*, *Alcaligenes latus*, *Escherichia coli*, *Pseudomonas fragi*, *Pseudomonas putida*, *Pseudomonas oleovorans*, *Pseudomonas aeruginosa*, *Pseudomonas fluorescens*, *Halobiforma haloterrestris*, *Aeromonas punctata* and *Thiocapsa pfennigii*.